What is claimed is:

1. A method for determining effects of cycle time limitations for subprocesses (100.1, 100.2,...) of a production process for distinguishable units of a technical product,

in which

- a definition of the order in which the subprocesses (100.1, 100.2,...) of the production process are carried out,
- a planned cycle time (240.1, 240.2, 240.3) through the production process,
- a random sample including sample elements, each sample element including the actual cycle times of a unit through the subprocesses,
- and a maximum cycle time (220) through a selected subprocess (100.7),

are pre-selected,

and the method comprises the steps that are carried out using a data processing system:

- in all sample elements, replacing the actual cycle times through the selected subprocess (100.7) to reduced cycle times which are all less than or equal to the maximum cycle time (220),
- determining the cycle times through the production process, which result from the reduction, for the random sample, using
  - the reduced cycle times through the selected subprocess (100.7),
  - the actual cycle times of the random sample through the remaining subprocesses
  - and the order of sequence,
- determining a degree of delivery reliability (410) of the production process as the proportion of sample elements of the entire random sample whose cycle times are less than or equal to the planned cycle time (240.1, 240.2, 240.3) through the production process.

2. The method as recited in Claim 1,

wherein

- a degree of delivery reliability function (300.3) is determined which indicates the degree of delivery reliability as a function (300.3) of the planned cycle time; the method being applied to different planned cycle times during the determination,
- and a planned cycle time (240.3) and a degree of delivery reliability (230.2) are determined by selecting an operating point (400.3) of the degree of delivery reliability function (300.3).

3. The method as recited in Claim 2,

wherein a point at which the slope of a curve of the degree of delivery reliability function (300.3) is approximately 45 degrees is selected as the operating point (400.3).

4. The method as recited in one of Claims 1 through 3,

wherein

- a lower bound (230.1) is pre-selected for the degree of delivery reliability of the production process,
- the method is applied to different planned cycle times,
- and it is determined which of these planned cycle times result in degrees of delivery reliability greater than or equal to the lower bound (230.1).

5. The method as recited in one of Claims 1 through 4,

wherein

- the average of the cycle times through the production process is determined,
- and an average storage duration (250.1, 250.2) is determined as the difference between the planned cycle time (240.1, 240.2, 240.3) and the average cycle time through the production process.

6. The method as recited in Claim 5,

wherein

- the average number of units of the technical product which are to be produced by the production process is pre-selected,
- and the average inventory of units is determined as a function of the average number to be produced and of the determined average storage duration.

7. The method as recited in Claim 6,

wherein a storage duration function (300.4) is determined which indicates the average storage duration as a function of the planned cycle time;

the method according to Claim 6 being applied to different planned cycle times during the determination.

8. The method as recited in Claim 6 or Claim 7,

wherein an inventory function (300.5) is determined which indicates the average inventory as a function of the planned cycle time;

the method according to Claim 6 being applied to different planned cycle times during the determination.

9. The method as recited in one of Claims 1 through 8,

wherein

- an upper bound (250.1) is pre-selected for the average storage duration,
- and, by varying the planned cycle time, it is determined which planned cycle times (240.1, 240.2, 240.3) result in storage durations of less than or equal to the upper bound (250.1).

10. The method as recited in one of Claims 1 through 9,

wherein

a reduction factor of less than 1 is determined for the cycle time through the selected subprocess (100.7);

and the reduced cycle times are determined as the product of the reduction factor and the actual cycle times of the sample elements through the selected subprocess (100.7).

11. The method as recited in one of Claims 1 through 9,

wherein a reduction factor of less than 1 is pre-selected for the cycle time through the selected subprocess (100.7);

and the maximum cycle time is determined as the product of the reduction factor and the maximum actual cycle time through the selected subprocess (100.7) among the sample elements.

12. A device for determining effects of cycle time limitations for subprocesses of a repeatable production process for distinguishable units of a technical product,

comprising the following components:

- a device for determining an order in which the subprocesses (100.1, 100.2,...) are carried out,
- a device for defining a planned cycle time (240.3) through the production process,
- a device for defining a maximum cycle time (240.3) through at least one first subprocess (100.7),
- a device for determining a random sample for the production process, the random sample including the cycle time through each subprocess (100.1, 100.2,...) for each sample element,
- a device for reducing the cycle times through the first subprocess (100.7) in all sample elements to a value less than or equal to the upper bound,
- a device for determining the cycle times through the production process for the random sample, using the reduced cycle times for the first subprocess (100.7), the actual cycle times for the remaining subprocesses, and the order of sequence,
- a device for determining a degree of delivery reliability as the proportion of sample elements of the entire random sample whose cycle times are less than or equal to the planned cycle time through the production process.

13. The device as recited in Claim 12,

wherein

the device includes

- a device for determining the average cycle time through the production process,
- and a device for determining an average storage duration as the difference between the planned cycle time (240.3) and the average cycle time.

14. The method as recited in Claim 12 or Claim 13,

wherein

the device includes

- a device for determining, by varying the planned cycle time, a degree of delivery reliability function (300.3) which indicates the degree of delivery reliability as a function (300.3) of the planned cycle time,
- and a device for generating a graphical representation of the degree of delivery reliability function (300.3).

15. The device as recited in Claim 14,

wherein

the device includes

- a device for defining a plurality of combinations (comb_11, comb_12, ...) of maximum cycle times for subprocesses; each combination including at least one upper bound for the cycle time through a subprocesses,
- and a device for generating one graphical representation of the degree of delivery reliability function (300.3) for each defined combination.

16. The device as recited in Claim 15,

wherein

the device includes

- a device for determining, by varying the planned cycle time, a storage duration function (300.4) for each defined combination, the storage duration function indicating the average storage duration as a function of the planned cycle time for this combination,
- and a device for generating a graphical representation of the storage duration function (300.4) for the combinations.

17. A computer program product which can be directly loaded into the internal memory of a computer and which includes software segments with which a method according to one of Claims 1 through 11 can be executed when the product is running on a computer.

18. A computer program product which is stored on a computer-readable medium and which has computer readable program means causing the computer to execute a method according to one of Claims 1 through 11.